IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPLICATION NO.:	10/797,796
FILED:	March 10, 2004
APPLICANT:	Steven Aoyama
TITLE:	MOLD FOR A GOLF BALL
GROUP ART UNIT:	3711
EXAMINER:	Raeann Gordon
ATTY. DOCKET NO.:	B03-25

SUBSTITUTE APPEAL BRIEF

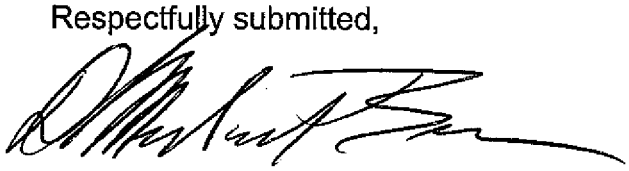
Mail Stop Appeal Brief – Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

This substitute Appeal Brief is in response to the NOTIFICATION OF NON-COMPLIANCE WITH THE REQUIREMENTS OF 37 CFR 41.37 (c) mailed January 11, 2007 relating to an Appeal Brief filed in response to the Final Office Action mailed May 17, 2006 finally rejecting the pending claims. A Notice of Appeal was timely filed on July 19, 2006 under the provisions of 37 CFR § 1.192. This Brief is being filed under the provisions of 37 CFR § 1.192.

In accordance with the authority set forth above, and for the facts and reasons fully developed herein, Appellants respectfully request that the decision of the Examiner be reversed in its entirety.

Respectfully submitted,



Date: February 7, 2007

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Ex parte: Aoyama
Appeal No. _____

APPEAL BRIEF

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REAL PARTY IN INTEREST

Acushnet Company is the assignee of the present patent application. Acushnet Company is a Delaware corporation with headquarters in Fairhaven, Massachusetts. Acushnet Company is a fully owned subsidiary of Fortune Brands, Inc. Fortune Brands, Inc. is a Delaware corporation with headquarters in Lincolnshire, Illinois.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to Appellants, Appellants' legal representative, or Assignee that will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1-27 were originally filed. Claims 1-16 were cancelled in response to a restriction requiremnt. Subsequently claims 18 and 20 were cancelled. The remaining claims 17, 19 and 21-27 are pending and subject to this appeal. The claims pending at the time of the final rejection are attached in the **CLAIMS APPENDIX**.

STATUS OF AMENDMENTS

The amendments filed on March 3, 2006, in response to the Office Action mailed December 15, 2005, were entered by the Examiner, as noted in the Final Office Action mailed May 17, 2006.

The response to the Final Office Action mailed May 17, 206, contained no amendments. As such, the claims on appeal are 17, 19, and 21-27, as amended on March 3, 2006.

SUMMARY OF CLAIMED SUBJECT MATTER

As stated in independent claim 17, the present invention provides for a golf ball that is formed by mating an upper mold cup (22) with a lower mold cup (23) along mating surfaces (25, 26) that define a parting line (42) corrugated on its spherical surface. (FIGS. 6, 8, 10 and 12) This parting line is at a position corresponding approximately to the equator region of the ball. Unlike prior art patents showing corrugated parting lines, the Applicants' corrugated parting line comprises multiple radii that form a plurality of peaks and valleys, which are offset from the dimples in such a way that they do not interfere with the dimple edge. The inventive concept being that the parting line of the Applicants' invention does interdigitate with dimples on both hemispheres of a golf ball, to give the illusion of a substantially "seamless" appearance. (Specification at page 6, lines 11-17) While there is obviously a seam, in the golf ball industry "seamless" is a word that while erroneously, is still commonly used to describe golf balls where the parting lines are not straight and not located on the equator of the ball.

An aspect of the Applicants' invention is that their corrugated parting line is geometrically determined regardless of the dimple pattern used, i.e. icosahedral, octahedral, dipyramid, etc. This is because the corresponding secondary waveform $\lambda 2$ is broken into individual segments, the number of which depends on the dimple pattern, and applied in a periodic fashion to the base waveform $\lambda 1$, which therein continues around the equator of the ball. The formula used is $\lambda 1 = \pi D/n$, where D is the diameter of the spherical mold cavity and n is an integer that depends on the dimple pattern, usually between 3 and 6. In other words $\lambda 1$ is generally 1/3, 1/4, 1/5, or 1/6 the circumference of the mold cavity, and corresponds to the number of times around the equator a particular dimple pattern makes. (Specification at page 8, line 24 to page 9, line 2) For example, octahedron-based patterns typically employ a sub-pattern of dimples that is repeated four times around the equator of the ball. In cooperation with this, the base waveform will have four repetitions of its cycle in one trip around the equator, giving it a wavelength of 1/4 of the circumference of the ball. However, an icosahedron-based pattern usually has a five fold repetition around the equator.

Therefore the present invention will employ a base waveform having a wavelength 1/5 the circumference of the ball (Specification at page 8, lines 26 to page 9, line 1). The secondary waveforms $\lambda 2$ are always of shorter wavelengths and are generally between 1/4 and 1/12 of $\lambda 1$.

To illustrate conventional waveforms, FIGS. 7, 9, and 11 show three embodiments of icosahedron-based dimple patterns, each shows only the base waveforms ($\lambda 1$). The dashed lines delineate the dimple pattern segments that repeat multiple times around each hemisphere. (For the icosahedron pattern this is 5 times around.) (Specification at page 9, lines 3-7)

To illustrate the concept of the present invention, FIGS. 8, 10, and 12, show what the completed parting lines (42) of FIGS. 7, 9 and 11 respectively, are when there is a secondary waveform $\lambda 2$ super-positioned upon the base waveform $\lambda 1$. (Specification at page 10, lines 1-13). The base waveform $\lambda 1$ shown in FIGS. 7, 9, and 11, intersects at least some of the dimples on the ball, while the completed lines of FIGS. 8, 10, and 12 do not intersect any dimples, in fact maintain a spaced relationship from the dimple edges. It a ball were to be made with the parting line intersecting dimples then excessive flashing would occur at these dimple sites. This is ob course undesirable. Thus the creation of a golf ball without any intersection of dimples is critical to the present invention. In FIG. 8, the secondary waveform $\lambda 2$ is approximately 1/6 of the base waveform $\lambda 1$ of FIG. 7, while in FIGS. 10 and 12, the secondary waveform $\lambda 2$ is approximately 1/7 of $\lambda 1$. (Specification at page 10, lines 11-13) The superposition of these shorter waveforms permits the parting line to weave between and around the individual dimples and thus not to intersect any of them. All the embodiments of the present invention have the base waveforms $\lambda 1$ follow the dimple pattern, while the shorter waveforms $\lambda 2$ follow the contour of the individual dimples.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

(1) whether the Examiner has established under 35 U.S.C. 102(b) that each and every element as set forth in claims 17, 19, and 21-23 are anticipated by U.S. Patent 5,840,351 to Inoue *et al*;

(2) whether the Examiner has established under 35 U.S.C. 102(b) that each and every element as set forth in claims 17 and 21-23 are anticipated by U.S. Patent 4,653,758 to Solheim;

(3) whether the Examiner has established under 35 U.S.C. 102(b) that each and every element as set forth in claims 17 and 21-24 are anticipated by U.S. Patent 5,249,804 to Sanchez; and

(4) whether the Examiner has established a prima facie case of obviousness under 35 U.S.C. 103(a) in rejecting claims 25 and 26, as being unpatentable over Inoue ('351) and Solheim ('758) each in view of U.S. Publication 2002/0019274 to Sajima (now U.S. Patent No. 6,540,6250.

ARGUMENT

(1) Claims 17, 19, and 21-23 were rejected under 35 U.S.C. § 102(b) as as being anticipated by Inoue, as the Examiner set forth in the Final Office action mailed May 17, 2006. The Examiner specifically addressed this rejection on page 2 of the Final Office Action, as cited below:

> "Claim 17, Inoue discloses a golf ball comprising a corrugated parting line offset from the equator, which does not intersect or interfere with the dimples edges (fig 3). Claim 18, the dimples create a seamless appearance by appearing on either side of the corrugated parting line. Claim 19, the parting line is offset from the equator by at least 0.1mm or 0.004 inch. Claim 20, the parting line creates a plurality of peaks and valleys. Claims 21-23, as understood by the Examiner, the parting line is a continuous waveform around the equator."

It is to be noted that claims 18 and 20 were previously rejected by the Examiner in the first Office Action. Following the First Office Action, the Applicants incorporated their limitations into claim 17 and cancelled them. The Examiner has treated them in her rejection as if they were still pending. Since the content is now incorporated into claim 17, the Applicants have responded as if they were part of the rejection of claim 17.

In Fig. 3 of Inoue, a corrugated parting line (6) is shown that is entirely above the ball equator (5). This is an atypical concept that is not even contemplated in the present invention, wherein the parting lines are centered on the equator so that they exist in equal parts on both sides of the equator. Also, the middle section of Inoue's Fig. 3 is not offset from the dimples, and it clearly intersects and interferes with several dimple edges. Furthermore, Applicants are very specific in their claim 17, that their parting surface not only corresponds to the equator region, but that it interdigitates with the dimples on both sides of the equator. Inoue clearly does not suggest this.

Claim 19 recites that the parting line is offset from the equator by at least 0.1mm or 0.004 inch and the Applicants acknowledge that the patentability of this claim is based upon its dependence upon an allowed independent claim.

In rejecting claims 21-23 the Examiner stated that Inoue shows a continuous waveform around the equator. This does not teach claim 21 of the present invention which recites that the Applicants' corrugated parting line is a result of a superposition upon a longer base waveform with a substantially shorter secondary waveform.

(Specification at page 9, lines 22-28) At best Inoue only teaches a base waveform. This is a critical inventive concept, because the parting line of the Applicants golf ball is a composite of a longer base waveform that follows the dimple pattern of the ball and a shorter secondary waveform that follows the geometry of individual dimples. (Specification at Page 9, lines 28-30) Clearly, the Applicants have claimed much more than just a waveform around the equator, and there is nothing in the Inoue specification to teach this.

Applicants respectfully submit that the Examiner has not established a rejection under 35 U.S.C § 102(b), and has, therefore, erred in the rejection of appealed claims 17, 19, and 21-23 for the reasons fully-developed above.

For claims to be rejected under 35 U.S.C. § 102(b), each and every element as set forth in the claims of the present invention must be found, either expressly or inherently, in a single prior art reference. Applicants respectfully submit that Inoue does not disclose all the elements of the claimed invention.

(2) Claims 17 and 21-23 were rejected under 35 U.S.C. § 102(b) as as being anticipated by Solheim. The Examiner addressed this rejection on pages 2 of the Final Office Action, as cited below:

> "Claims 17 and 21-23 are rejected under U.S.C. 102(b) as being anticipated by Solheim (4,653,758). Claim 17, Solheim discloses a golf ball comprising a corrugated parting line, which does not intersect or interfere with the dimple edges (fig.6). Claim 18, the dimples create a seamless appearance by appearing on either side of the corrugated parting line. Claim 20, the parting line creates a plurality of peaks and valleys. Claims 21-23, as understood by the examiner, the parting line is a continuous waveform around the equator."

The treatment of rejected claims 18 and 20 which were cancelled and incorporated into claim 17 has been discussed above.

Relating to the independent claim 17, Solheim discloses a corrugated parting line which although appears on both sides of the equator, clearly the dimples in Solheim are not interdigitated and that is critical to the Applicants invention.

As in the above rejection, the Examiner has rejected dependent claims 21-23 based on the cited reference, Solheim, having a parting line being of a continuous

waveform around the equator, with no directives as to the parting line being established as a result of super-positioning a short secondary waveform into a longer base waveform such that the base waveform follows the dimple pattern of the ball and the shorter secondary waveform follows the individual dimples as taught by Applicants' dependent claim 21. Again, the Applicants respectively submit that this is a novel concept that is not suggested in the Solheim patent, which at best only suggests a base waveform.

Applicants' claim 22 is dependent on allowance of the base claim 17 and intervening claim 21, as it further defines their content. Also, Applicants' claim 23 is dependent that is only patentable upon the allowance of the independent base claim and intervening claims.

Applicants respectfully submit that the Examiner has not established a rejection under 35 U.S.C § 102(b), and has, therefore, erred in the rejection of appealed claims 17 and 21-23 for the reasons fully-developed above.

For claims to be rejected under 35 U.S.C. § 102(b), each and every element as set forth in the claims of the present invention must be found, either expressly or inherently, in a single prior art reference. Applicants respectfully submit that Solheim does not disclose all the elements of the claimed invention.

(3) Claims 17 and 21-24 were rejected under 35 U.S.C. § 102(b) as as being anticipated by Sanchez. The Examiner addressed this rejection on page 3 of the Final Office Action, as cited below:

> "Claim 17, Sanchez discloses a golf ball comprising a corrugated parting line, which does not intersect or interfere with the dimple edges (fig. 2). Claim 18, the dimples create a seamless appearance by appearing on either side of the corrugated parting line. Claim 20, the parting line creates a plurality of peaks and valleys. Claims 21-23, as understood by the Examiner, the parting line is a continuous waveform around the equator. Claim 24, the dimples create an icosahedron dimple pattern."

As to the rejection of claim 17, the parting line shown in Sanchez is of the same type as taught by Solheim above, but again there is an absence of teaching of interdigitation across the parting line.

The Applicants are very specific in claim 21 that their waveform is comprised of a longer waveform that corresponds to the dimple pattern and then is superimposed by a much shorter waveform corresponding to the geometry of the individuals dimples. Sanchez shows huge gaps of wasted space along the corrugated parting line (as does Solheim above and also the parting line of Sanchez is not based upon mathematical super-positioning of a shorter waveform upon a longer waveform. Please note how in the Applicant's specification, their parting line shown in FIG. 7 is based on a particular dimple pattern (in this embodiment an icosahedral pattern) and the waveform that is created reflects the impact of the shorter waveform, in that it follows not the overall dimple pattern itself, but, instead shadows the contour of the individual dimples. This maximizes the dimple space available, which we have stated is of vital important to golf ball performance.

The Applicants have acknowledged that claims 22, 23, and 24 are patentable only because they are based upon an allowable independent base claim and ant intervening claims therein, and that they further limit the base claim.

Applicants respectfully submit that the Examiner has not established a rejection under 35 U.S.C § 102(b), and has, therefore, erred in the rejection of appealed claims 17 and 21-24 for the reasons fully-developed above.

For claims to be rejected under 35 U.S.C. § 102(b), each and every element as set forth in the claims of the present invention must be found, either expressly or inherently, in a single prior art reference. Applicants respectfully submit that Sanchez does not disclose all the elements of the claimed invention.

(4) Claims 25 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Inoue and Solheim (each) in view of Sajima. The Examiner addressed this rejection on page 3 of the Final Office Action, as cited below:

> "Claims 25 and 26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Inoue and Solheim (each) in view of Sajima (2002/0019274). The primary references do not disclose an octahedral or cube-octahedral dimple pattern. Sajima teaches a golf ball comprising octahedral or cube–octahedral dimple patterns. One of ordinary skill in the art would modify the dimple pattern for enhanced flight performance."

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, the prior art reference must suggest to one of ordinary skill in the art that they should make the claimed invention. *In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, one of ordinary skill in the art must have a reasonable expectation of success in making the claimed invention based on the revelations contained in the prior art reference. *Id.* Finally, the prior art reference must teach or suggest all the claim limitations. *Id.* The suggestion to make the claimed invention and the reasonable expectation of success in making it must be found in the prior art reference and not in Applicant's disclosure. *Id.*

While Sajima teaches of a golf ball comprising octahedral or cube–octahedral dimple patterns that are cited in Applicants' claims 25 and 26, Sajima does not cure the deficiencies of the base references Inoue or Sanchez in order to reject the Applicants' base claim 17, therefore a *prima facie* case of obviousness has not been established. The primary references, Inoue and Sanchez, do not teach the claim limitations of the base claim 17, and the Applicants acknowledge that claims 25 and 26 are only patentable by virtue of their dependence from the independent claim 17 and that they further define the base claim.

Appellants respectfully submit that the Examiner has not established a *prima facie* case of obviousness and has, therefore, erred in the rejection of appealed claims 25 and 26 for the reasons fully-developed above.

CLAIMS APPENDIX

1-16 (Cancelled)

17. (Previously presented) A golf ball having a pattern of dimples and a corrugated parting line on its spherical surface, the golf ball formed in a mold which has a generally spherical cavity therein and is composed of upper and lower mold cups being removably mated along a parting surface at a position corresponding to an equator region of the spherical cavity of the mold, wherein the corrugated parting line of the golf ball comprises multiple radii forming a plurality of peaks and valleys which are offset from the dimples as not to interfere with the dimple edge and the dimples on one side of the parting line interdigitate with the dimples on the other side to form a golf ball having a substantially seamless appearance

18. (Cancelled)

19. (Original) The golf ball according to claim 17, wherein the parting line along the profile of the equator dimples is offset from the equator dimples by at least 0.001 inch.

20. (Cancelled)

21. (Previously presented) The golf ball according to claim 17, wherein the corrugated parting line is a result of a superposition of a base waveform with a secondary waveform, whereby the wavelength of the secondary waveform is substantially shorter than that of the base waveform

22. (Original) The golf ball according to claim 21, wherein the secondary waveform is continuous around the equator of the molded golf ball.

23. (Original) The golf ball according to claim 21, wherein the secondary waveform is broken into individual segments that are applied in a periodic fashion to the base waveform

24. (Original) The golf ball according to claim 17, wherein the dimples of the molded golf ball are in an icosahedral arrangement pattern.

25. (Original) The mold according to claim 17, wherein the dimples of the molded golf ball are in an octahedral arrangement pattern.

26. (Original) The mold according to claim 17, wherein the dimples of the molded golf ball are in a cube-octahedral arrangement pattern.

27. (Original) The mold according to claim 17, wherein the dimples of the molded golf ball are in a dipyramid arrangement pattern.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None